

CLAIMS

What is claimed is:

1. A method for producing blast furnace coke comprising the steps of:
providing a container;
disposing a volume of loose coal into the container such that a vertical dimension of the volume of loose coal in the container is smaller than a horizontal dimension of the volume of loose coal;
applying a force to the volume of loose coal in the container to produce a volume of compacted coal having a density which is greater than that of the loose coal disposed in the container;
disposing the volume of compacted coal into a non-recovery type oven; and
heating the volume of compacted coal to produce coke.

2. The method according to claim 1, wherein the step of applying force comprises applying force uniformly to the volume of loose coal in the container to produce a volume of compacted coal having a density which is greater than that of the loose coal disposed in the container.

3. The method according to claim 2, wherein the volume of compacted coal has a substantially uniform density.

4. The method according to claim 1, wherein the step of applying force comprises applying force to the volume of loose coal in the container to produce a volume of compacted coal resulting in a coke apparent specific gravity of 1.05.

5. The method according to claim 1, wherein the step of applying force comprises applying force concurrently to different regions of the volume of loose coal in the container to produce a volume of compacted coal having a density which is greater than that of the loose coal disposed in the container.

6. The method according to claim 4, wherein the step of applying force comprises:

providing a plurality of plates in close proximity to the volume of loose coal in the container;

applying the plurality of plates to the coal in the container to transmit a force to the volume of loose coal to produce a volume of compacted coal having a density which is greater than that of the loose coal disposed in the container.

7. A method of producing coke comprising the steps of:
- disposing a volume of coal into a non-recovery type oven having an oven floor;
 - heating the volume of coal to produce a coke mass;
 - providing a container;
 - moving the coke mass from the oven at a substantially constant elevation to the container;
 - quenching the coke mass in the container to produce a quenched coke mass;
 - and
 - removing the quenched coke mass from the container.

8. The method according to claim 6 wherein the step of providing a container comprises the step of providing a container at an elevation substantially equal to an elevation of the oven floor.

9. The method according to claim 6, wherein the coke mass has a horizontal dimension, and the step of providing a container comprises providing a container having a horizontal dimension greater than the horizontal dimension of the coke mass.

10. The method according to claim 6, wherein the step of quenching comprises the step of applying a volume of water to the coke mass in the container to produce a quenched coke mass.

11. The method according to claim 6, wherein the step of quenching comprises the step of recovering the heat transferred to the volume of water by the coke mass.

12. The method according to claim 6, wherein the step of quenching comprises the step of applying liquid nitrogen to the coke mass in the container to produce a quenched coke mass.

13. A method of producing coke comprising the steps of:

providing a first container;

disposing a volume of loose coal into the first container such that a vertical dimension of the volume of loose coal in the first container is smaller than a horizontal dimension of the volume of loose coal;

applying a force to the volume of loose coal in the first container to produce a volume of compacted coal having a density which is greater than that of the loose coal disposed in the first container;

disposing the volume of compacted coal into a non-recovery type oven having an oven floor;

heating the volume of compacted coal to produce a coke mass;

providing a second container;

moving the coke mass from the oven at a substantially constant elevation to the second container;

quenching the coke mass in the second container to produce a quenched coke mass; and

removing the quenched coke mass from the second container.